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UNITED STATES DISTRICT COURT

DISTRICT OF OREGON

EUGENE DIVISION

WILLAMETTE RIVERKEEPER et al., Plaintiffs, vs. NAT'L MARINE FISHERIES SERVICE et al., Defendants, and OREGON DEP'T OF FISH AND WILDLIFE, Defendant-Intervenor.	Case No.: 6:21-cv-34-AA **PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT AND RELIEF** Oral Argument Requested

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Glossary of Acronyms

APA ..... Administrative Procedure Act

DPS ..... Distinct Population Segment

EIS..... Environmental Impact Statement

ESA ..... Endangered Species Act

ESU ..... Evolutionary Significant Unit

FWS ..... Fish and Wildlife Service

HGMP ..... Hatchery and Genetic Management Plan

ITS..... Incidental Take Statement

NEPA ..... National Environmental Policy Act

NMFS..... National Marine Fisheries Service

ODFW..... Oregon Department of Fish and Wildlife

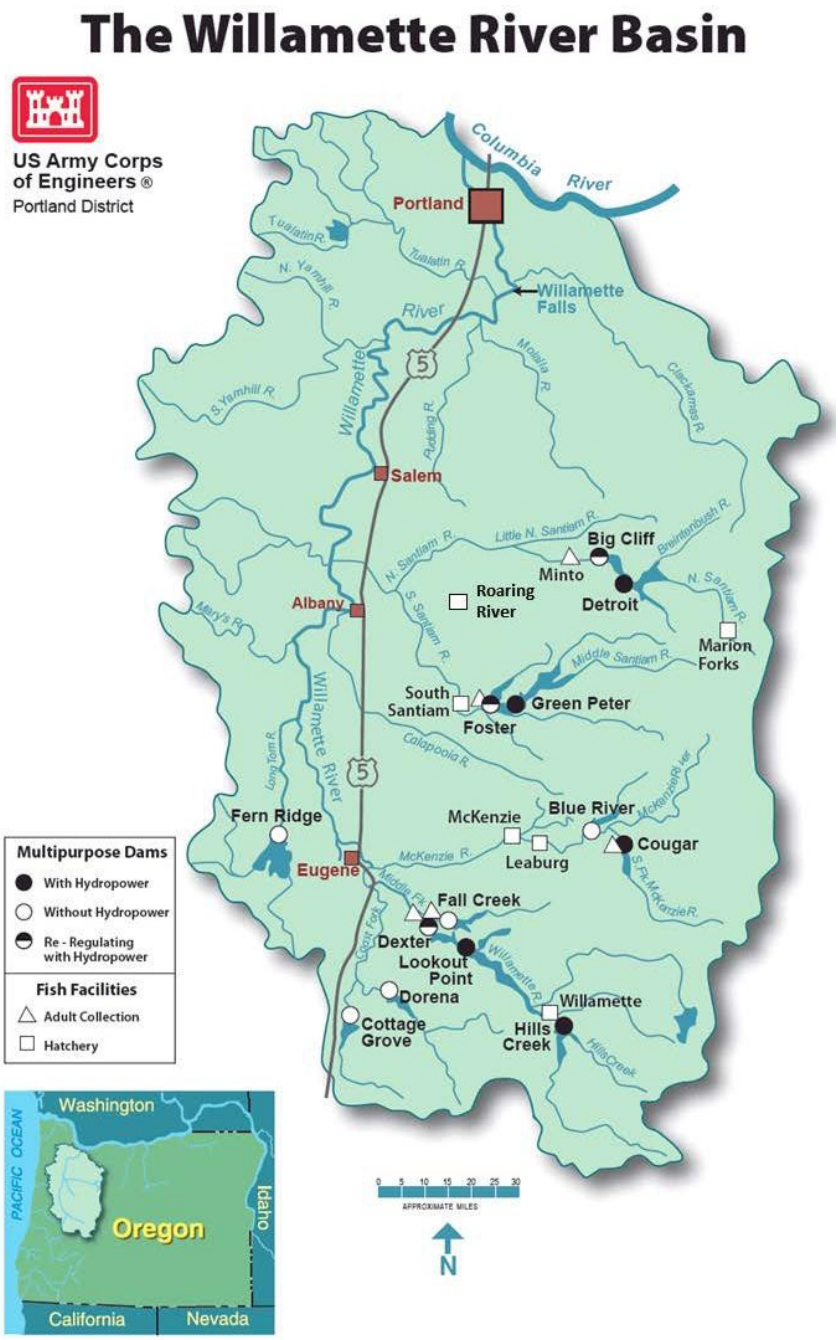
ROD ..... Record of Decision

UWR ..... Upper Willamette River

WVP..... Willamette Valley Project

Note on Administrative Records and Bates Stamp Cite Form

There are four administrative records in this case: One each from Defendants National Marine Fisheries Service, U.S. Fish and Wildlife Service, and U.S. Army Corps of Engineers, ECF No. 24, and the National Marine Fisheries Service also filed a supplemental administrative record. ECF No. 28. Plaintiffs cite these administrative records as "NOAA AR," "FWS AR," "USACE AR," and "NOAA AR SUP," and elide from the bates stamp numbers any zeros that precede the counting numbers.



Map of the Willamette River basin showing fish facilities and dams. NOAA AR 2007.

Motion

This case concerns releases of non-native, hatchery summer steelhead into habitat for native winter steelhead that are listed as threatened with extinction under the Endangered Species Act ("ESA") in the upper Willamette River ("UWR") in Oregon. Pursuant to FED. R. CIV. P. 56(a), LR 7-1, and the Court's Order of April 3, 2024 (ECF No. 45), Plaintiffs Willamette Riverkeeper et al. hereby respectfully file this motion for summary judgment, seeking a ruling that Defendants U.S. Army Corps of Engineers ("Corps") and U.S. Fish and Wildlife Service ("FWS") violated the ESA in funding and facilitating releases of summer steelhead, which jeopardize winter steelhead, and Defendant National Marine Fisheries Service ("NMFS") violated the ESA in issuing an unlawful Biological Opinion ("BiOp") and Environmental Impact Statement ("EIS") under the National Environmental Policy Act ("NEPA") to analyze the effects on winter steelhead of those releases. Riverkeeper seeks vacatur of the agency's decisions related to the summer steelhead program. Counsel for Plaintiffs made a good faith effort to resolve this dispute with counsel for NMFS and FWS and Defendant-Intervenor Oregon Department of Fish and Wildlife ("ODFW"), but the parties were unable to. LR 7-1(a)(1)(A).

The ESA

The ESA is "the most comprehensive legislation for the preservation of endangered species ever enacted by any nation." *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 180 (1978). For ESA-listed anadromous fish, federal agencies must consult with NMFS under Section 7 of the ESA to "insure that any action authorized, funded, or carried out by [the] agency . . . is not likely to jeopardize the continued existence" of the species. 16 U.S.C. § 1536(a)(2). NMFS then prepares a BiOp that addresses the species' status, and whether the proposed action, along with direct, indirect, and cumulative effects, will jeopardize it. *Wild Fish Conservancy v. Salazar*, 628 F.3d 513, 518 (9th Cir. 2010) (citing 50 C.F.R. § 402.14(g)). "To 'jeopardize the continued existence' of a species is to 'engage in an action that reasonably would be expected, directly or

indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of the species.'" *Id*.

In turn, Section 9 of the ESA prohibits "take" of individual members of a listed species. *Id.* at 519 (citing 16 U.S.C. § 1538). If, during consultation, NMFS "concludes that an action will not jeopardize the existence of a listed species or adversely modify its habitat, but the project is likely to result in incidental taking of listed species, [it] must provide a written statement with the BiOp that authorizes such takings." *Or. Nat. Res. Council v. Allen*, 476 F.3d 1031, 1034 (9th Cir. 2007). The purpose of an incidental take statement ("ITS") is to set a permissible amount or extent of take of members of the species, to "set forth a 'trigger' that, when reached" requires the parties to re-initiate consultation to ensure excessive take of individuals does not jeopardize the species as a whole. *Ariz. Cattle Growers' Ass'n v. FWS*, 273 F.3d 1229, 1249 (9th Cir. 2001).

Finally, under Section 4(d) of the ESA, NMFS may promulgate regulations to conserve species listed as "threatened" under the ESA. 16 U.S.C. § 1533(d). NMFS has issued regulations allowing "take" from hatchery fish pursuant to an approved "Hatchery and Genetic Management Plan" ("HGMP"). 50 C.F.R. § 223.203(b)(5); *see Native Fish Soc'y v. NMFS*, 992 F. Supp. 2d 1095, 1102 (D. Or. 2014) (evaluating a HGMP for the Sandy River hatchery).

Background

A. Winter Steelhead in the Upper Willamette River Basin.

Historically, Willamette Falls barred upstream migration of anadromous salmonids except winter steelhead and spring Chinook salmon, which returned to the Willamette River during high flows in late winter and spring, and were able to ascend the falls.[1] NOAA AR 2030–31. As recently as the period from 1985 to 1990, annual winter steelhead returns to Willamette Falls averaged around 4,707 fish, peaking one year at 13,452 fish. NOAA AR 2031. The life histories of individual winter steelhead are "highly diverse." NOAA AR 14474. Eggs develop in

[1] Native legend taught the falls were made by a god so their people would have fish to eat all winter. *Lyman, H.S.* "Reminiscences of Louis Labonte," OR. HIST. Q., 1, no. 2 (1900).

gravels from April through June. NOAA AR 4354. After emerging generally in April through July, juvenile winter steelhead rear in freshwater generally for two years, before migrating to the ocean. NOAA AR 2031. However, some juveniles rear in freshwater for up to seven years. NOAA AR SUP 1033. Moreover, some winter steelhead forgo anadromy and "residualize," meaning they stay in freshwater all their lives. NOAA AR 2177. By contrast, juvenile winter steelhead that migrate to the ocean are called "smolts" and are anadromous. NOAA AR SUP 621.

Most adult winter steelhead in the UWR return to freshwater in January through April. NOAA AR 2031. Most ascend Willamette Falls from February through April, and spawn in March through June, with most spawning in April and May, after winter storms peak. NOAA AR 2132 & 2136. Adults spawn in both mainstem rivers and in tributaries. NOAA AR 2055. Among salmonids, steelhead alone are "iteroparous," meaning some adults may not die after spawning, and may spawn more than once. NOAA AR 15227.[2]

Four independent populations of winter steelhead exist in the UWR basin: in the Molalla, North Santiam, South Santiam, and Calapooia River basins. NOAA AR 2030. Among the four winter steelhead populations, the greatest percentage of winter steelhead (=70%) inhabit the Santiam River basin. NOAA AR 10954. The winter steelhead populations in the North and South Santiam are both "core" and "genetic legacy" populations: A "core" population "historically represented the centers of abundance and productivity for a major population group," while a "genetic legacy" population "exhibit[s] important life history characteristics no longer found throughout the" listed area. NOAA AR 4257.

B. The Willamette Valley Project.

In 1938, Congress enacted the Flood Control Act of 1938, authorizing the Corps to begin implementating a plan for dams, reservoirs, and other projects in the UWR, as anticipated in

[2] Steelhead that spawn and do not die either reside, or emigrate to the ocean and are then called "kelts." NOAA AR 2138–39.

House Document No. 544. 75th Cong., 3d. Sess., Pub. L. 761, 52 Stat. 1215, 1222 (June 28, 1938). House Document 75-544, transmitting the Corps' report on the UWR, anticipates the "principal fish that will be affected . . . are migratory spring Chinook salmon and steelhead trout and resident game trout. . . . Accordingly, extensive and enlarged modern hatcheries are proposed on these tributaries to replace or supplement the existing hatcheries." *Id*. at 90–91. In 1950, Congress enacted the Flood Control Act of 1950, 81st Cong., 2d Sess., Pub L. 516, 64 Stat. 163 (May 17, 1950), which authorized the Corps to implement the Willamette Valley Project ("WVP"), as set forth in House Document 81-531. U.S. Army Corps of Engineers, Portland District, Review Report on Columbia River and Tributaries, Appendix J: Willamette River Basin, H.R. DOC. NO. 81-531, at 1866 (Oct. 1, 1948). That document requires the Corps to mitigate for the loss due to the WVP of natural spawing and rearing areas for the "present fish population" in the UWR. *Id*.; Declaration of Peter M. K. Frost, Exh. A (excerpt); Exh. B at 7 (Corps admission). Subsequently, the Corps built dams, hatcheries, and other projects in the UWR. USACE AR 7464; *Nw. Envt'l Def. Ctr. v. U.S. Army Corps of Eng'rs*, 479 F. Supp. 3d 1003, 1008–09 (D. Or. 2020) (describing WVP and its effects).

The WVP includes Big Cliff and Detroit Dams on the North Santiam and Foster Dam on the South Santiam, which together block winter steelhead from roughly one-third of historic habitat. NOAA AR 2809; FWS AR 2463 (map of blocked habitat). As a result, winter steelhead "are largely confined below much of their historical spawning and rearing habitat." NOAA AR 13925. Moreover, habitat conditions below the dams are "poor." NOAA AR 2054. Water quality in the rivers and tributaries is degraded; many are "water quality limited" under the Clean Water Act due to high temperature and poor dissolved oxygen, both of which are important for steelhead. NOAA AR 14381–82. Further, riparian areas along the rivers and tributaries lack trees to create shade, and adjacent lands exhibit "poor agricultural and forestry practices." NOAA AR 14379-80. In 2015, NMFS has found that "[m]uch of the accessible habitat . . . in the North and South Santiam Rivers is degraded and under continued development pressure. Although habitat

restoration efforts are underway, the time scale for restoring functional habitat is considerable." NOAA AR 13928. Nonetheless, the habitat immediately below the dams is still the best habitat accessible to winter steelhead. NOAA SUP 1569 ("Much of the quality rearing habitat located downstream of Foster Dam appears to be situated in the roughly 10 miles between Foster Dam and McDowell Creek where the river has the highest gradient.").

C. Hatchery Summer Steelhead.

Historically, there were no summer steelhead in the UWR. FWS AR 7171; USACE AR 4455 ("Summer steelhead are not native to the Upper Willamette Basin."). In 1966, ODFW began releasing summer steelhead into the basin to create a new fishing opportunity because, as ODFW explained, "[n]ative winter steelhead had not provided the angling opportunity desired by sportsmen and fisheries managers, since they spawned and were essentially gone from the system by late May. By the time dependable weather rolled around, the winter fish were gone. The creation of a healthy summer run was intended to expand the duration of the steelhead angling season through the summer and fall and, in fact, that has happened." USACE AR 792.

ODFW took the summer steelhead it chose to release into the UWR from non-native stock from the Skamania Hatchery on the Washougal River in Washington. NOAA AR 2035.[3] This fish species was not part of the "present fish population" in the UWR when Congress authorized the WVP. USACE AR 12; Frost Decl., Exh. C at 3, # 5 (ODFW admission). Accordingly, the Corps is not required to fund or facilitate summer steelhead releases into the UWR as part of its duty to mitigate for impacts to fisheries caused by the WVP. Frost Decl., Exh. B at 10, ## 7 & 8 (Corps admission).

ODFW spawns summer steelhead at the South Santiam Hatchery and releases them into the South Santiam, and also transfers them to the Marion Forks Hatchery on the North Santiam

[3] Because they are not native to the UWR, summer steelhead are not included in the listing of steelhead in the UWR. *Threatened Status for Two ESUs of Steelhead in Washington and Oregon,* 64 Fed. Reg. 14,517, 14,521 (March 25, 1999); NOAA AR 2030.

for rearing, and then to the Minto Fish Facility for release into that river. NOAA AR 2008.[4] Summer steelhead are released into those two basins, as well as the McKenzie, Middle Fork Willamette, and mainstem Willamette Rivers. NOAA AR 2099, 4344. They are released as "yearlings," meaning they are already about one year-old. NOAA AR 4341. They then exhibit life histories similar to winter steelhead: some juveniles residualize. NOAA AR 14475. Those that emigrate to the ocean generally return to freshwater as adults in two years, NOAA AR 4345, ascend Willamette Falls in June, and reach the Santiam basin from June through August. NOAA AR 14480, 14469. Some return to traps at fish collection facilities. NOAA AR 2122. Some are caught by anglers. NOAA AR 14422. Some spawn in the wild, with each other, or with winter steelhead. NOAA AR 2133.

D. Listing of Winter Steelhead.

On March 25, 1999, NMFS listed winter steelhead in the UWR from Willamette Falls south to the Calapooia River as a "evolutionarily significant unit" ("ESU") threatened with extinction. 64 Fed. Reg. at 14,521. NMFS was "concerned about the universally declining trends in abundance in the relatively small-to-moderate sized runs of winter steelhead in this ESU." *Id*. at 14524. NMFS noted steelhead "native to the Upper Willamette River ESU are late-run winter steelhead, but introduced hatchery stocks of summer and early-run winter steelhead also occur in the [UWR]." *Id*.[5] NMFS was "concerned about the potential risks associated with interactions

[4] The South Santiam hatchery, which is at the base of Foster Dam, spawns summer steelhead for release into the North and South Santiam Rivers. NOAA AR 3273. The Corps owns the land on which the hatchery was built, and funds part of its operations. NOAA AR 2336. The Foster Fish Facility is across the river from the hatchery. NOAA AR 2336, 9272. On the North Santiam River, the Corps owns the land and buildings at the Minto Fish Facility, NOAA AR 2326, and funds part of its operations. NOAA AR 2320.

[5] From 1965 to 1999, hatchery winter steelhead from the lower Columbia River were released into the UWR. NOAA AR 2036, 10995. Today, some winter steelhead can be found in west-side tributaries to the Willamette River; these are generally "early winter" steelhead thought to be a mix of hatchery and wild fish, and are genetically distinct from the native "late winter" steelhead. NOAA AR 10994, 2034. Hatchery winter steelhead releases into the UWR were

between non-native summer and wild winter steelhead, whose spawning areas are sympatric in some rivers (especially the Molalla and North and South Santiam Rivers)." *Id*. In 2006, NMFS re-listed ten "distinct population segments" ("DPS") of steelhead, including winter steelhead in the UWR. *Final Listing Determinations for 10 DPSs of West Coast Steelhead*, 71 Fed. Reg. 834, 860 (Jan. 5, 2006).

E. The 2008 BiOp on the Willamette Valley Project.

In 2007, the Corps consulted with NMFS to evaluate whether the WVP—including fish hatcheries—jeopardize winter steelhead and spring Chinook salmon. USACE AR 15. In 2008, NMFS issued a BiOp finding the WVP jeopardizes the continued existence of winter steelhead and spring Chinook. NOAA AR 2238-3508. NMFS found limiting factors for recovering winter steelhead include lack of access to historic habitat (blocked by dams) and degraded habitat below dams. NOAA AR 3179. And, at the time, "a third, unique, limiting factor is the potential for competition, predation, and genetic introgression from out-of-ESU hatchery fish interacting with and spawning in the wild with the native winter-run." NOAA AR 7605. In its 2008 BiOp, NMFS found the "non-native summer steelhead hatchery program creates threats to listed winter steelhead." NOAA AR 2419. NMFS noted that in the South Santiam River, "hatchery summer steelhead spawn naturally in the same areas as winter steelhead." NOAA AR 3027. Further, "[s]ince there is some overlap in the spawn timing of summer- and winter-run fish from February through March, the potential exists for summer steelhead to interbreed with winter steelhead in the South Santiam River." *Id*. NMFS noted that "[c]ompetition for rearing resources and spawning sites may also occur between hatchery-origin summer steelhead and wild winter steelhead." NOAA AR 2419. NMFS noted "hatchery [summer] steelhead have more of a tendency to residualize than hatchery spring Chinook" and "residual summer steelhead have

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stopped due to "poor fishery performance and potential negative impacts of the hatchery program on native stocks; the ESA listings were pending at this time." NOAA AR 10954. Western tributaries to the UWR are not part of the designated DPS. NOAA AR 2030.

been observed in all areas where hatchery fish are released." NOAA AR 2947.[6] Ultimately, NMFS found the WVP, including hatchery summer steelhead, jeopardize winter steelhead, and proposed a "reasonable and prudent alternative" that the Corps will implement an HGMP for summer steelhead, "after NMFS approves" an HGMP. NOAA AR 3250–51.

F. The 2011 Winter Steelhead Recovery Plan.

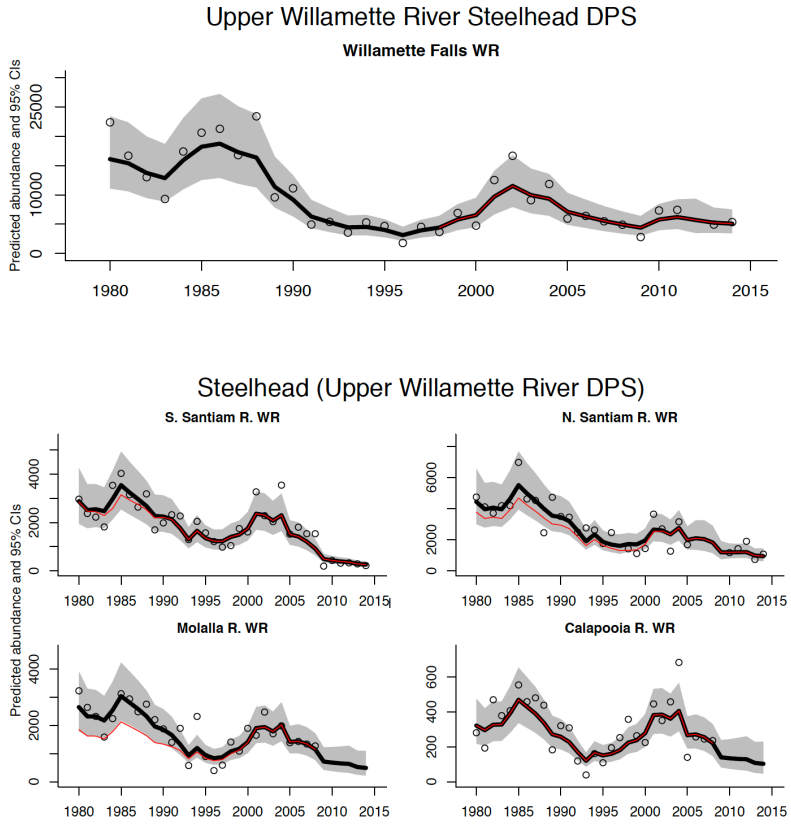
In 2011, NMFS issued a Recovery Plan specifying "limiting factors/threats" to winter steelhead recovery. NOAA AR SUP 98–460. In the North Santiam, a "key" factor/threat is blocked passage due to dams, and "secondary" factors/threats include poor habitat downstream, including elevated water temperatures, competition with residual summer steelhead, and summer steelhead spawning in the wild. NOAA AR SUP 664, 669. In the South Santiam, a "key" factor/threat is blocked passage due to dams, and "secondary" factors/threats include poor habitat downstream, including elevated water temperatures, competition with residual summer steelhead and naturally-produced progeny of summer steelhead, and summer steelhead interbreeding. NOAA AR SUP 672. As to summer steelhead, the Recovery Plan states: "Eliminate/reduce/shift hatchery programs to decrease mainstem and estuary competition and predation and reduce straying of hatchery fish onto natural spawning grounds." NOAA AR SUP 765.

G. The 2015 Winter Steelhead Status Review.

In 2015, NMFS issued a five-year status review for Northwest salmon and steelhead. NOAA AR 13699–14055. NMFS found that "overall abundance for the Upper Willamette River winter steelhead [distinct population segment] remains low with recent trends being stable." *Id*. For the North Santiam, NMFS found the most recent average count (2010-2014) "is only 1195 ± 194. Longer term trends 1999–2014 are negative, -5 ± 3%." NOAA AR 13919. For the South

[6] The 2008 BiOp states that mortality to winter steelhead juveniles and adults from summer steelhead are "not quantifiable at the present time (e.g., predation by program hatchery-origin fish on listed fish below release locations; competition and density dependent effects in the Lower Willamette and estuary)." NOAA AR 3312.

Santiam, NMFS found runs of 1,226 in 2013, 1,134 in 2014, and 1,312 in 2015. *Id.*[7] The 2015 five-year status review includes this chart:



NOAA AR 13921. The 2015 status review found that none of the four listed winter steelhead populations in the UWR is meeting recovery goals, and all four have downward trends. NOAA AR 2036–37. These data and trends are confirmed by Judge Hernandez's recent observation that winter steelhead and spring Chinook salmon in the UWR "are in a more precarious condition today than at the time NMFS issued the 2008 BiOp," and are now "even closer to the brink of extinction." *Nw. Envt'l Def. Ctr.*, 479 F. Supp. 3d at 1017.

[7] In 2015, NMFS found that in 2014, seals and sea lions caused 11%-18% mortality of winter steelhead at Willamette Falls. NOAA AR 13918. ODFW estimates sea lions ate 780 winter steelhead in 2014, 557 in 2015, and 915 in 2016. NOAA AR 2038.

H. The 2019 Biological Opinion and this Case.

On May 22, 2017, the plaintiffs in this case sued the Corps for failing to reinitiate consultation as to new information as to effects of summer steelhead on winter steelhead, and for causing jeopardy to winter steelhead by failing to submit to NMFS a proposed summer steelhead HGMP, as the 2008 BiOp requires. *Willamette Riverkeeper v. U.S. Army Corps of Eng'rs*, No. 6:17-cv-00801-MC (D. Or.). On April 9, 2018, the Corps reinitiated consultation with NMFS.[8]

On June 14, 2018, the Corps and ODFW proposed to NMFS five HGMPs: four for hatchery spring Chinook salmon, and one for summer steelhead. *Id*., ECF No. 46 at 2–3.[9] Two important distinctions exist between hatchery spring Chinook and summer steelhead. First, hatchery spring Chinook in the UWR are listed under the ESA, NOAA AR 14380, while summer steelhead are not. 64 Fed. Reg at 14,517. Second, hatchery spring Chinook in the UWR have a conservation role to support recovery of wild spring Chinook, NOAA AR 14444, while summer steelhead "have no conservation or recovery benefits" for winter steelhead. NOAA AR 14370.

On May 17, 2019, NMFS issued a BiOp to evaluate the effects of approving the HGMPs. NOAA AR 1990–2237.[10] Because neither the HGMPs nor the BiOp has a time limit, the analysis and findings in the BiOp will be re-visited only if reiniation of consultation occurs. NMFS

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[8] Accordingly, the parties voluntarily dismissed the case. *Id*., ECF No. 47.

[9] In addition to exercising its discretion to fund the summer steelhead program pursuant to the HGMP, the Corps has undertaken "agency action" under Section 7 by entering into contracts and leases to allow ODFW to use facilities the Corps fully or partially owns to capture, spawn, and release summer steelhead into the UWR, such as the South Santiam Hatchery. NOAA AR 2336; 50 C.F.R. § 402.02 ("agency action" includes entering into "contracts" and "leases"). For its part, FWS is a defendant because it has exercised its discretion under the Sport Fishing Restoration Act to fund part of the summer steelhead program. NOAA AR 4335, 2358.

[10] NMFS states it did not consider whether to approve the summer steelhead HGMP under Limit 5 of the ESA Section 4(d) rule, because the HGMP does not "propose to take natural-origin fish for broodstock purposes (direct take)." NOAA AR 2003, 14086.

prepared an EIS under NEPA to consider whether to approve the HGMPs. NOAA AR 14316–733. In 2019, NMFS issued a Record of Decision ("ROD") to do so. NOAA AR 14080–87.

Under the summer steelhead HGMP, 547,500 hatchery summer steelhead yearlings will be released annually into the UWR, with 242,000 (44.2%) released into the "core" and "genetic legacy" winter steelhead population areas of the North and the South Santiam Rivers (121,000 into each). NOAA AR 4344.[11] The goal is to have 14,880 adult summer steelhead return to the UWR as a whole to be available for fishing, and enough entering traps to use as hatchery broodstock. NOAA AR 4341, 4344. The HGMP also proposes measures such as spawning more summer steelhead earlier in the hatchery, to seek to have adults return earlier, and not spawn as frequently with adult winter steelhead. NOAA AR 2122, 2141.

Jurisdiction

The Court has jurisdiction over Plaintiffs' claims pursuant to the citizen suit provision of the ESA and federal question jurisdiction. 16 U.S.C. § 1540(g)(1); 28 U.S.C. § 1331. Plaintiffs have standing: they have been injured by NMFS's, FWS's, and the Corps' actions; those actions have caused those injuries; and the Court can redress them.[12] The Court has authority to issue the relief Plaintiffs seek. 28 U.S.C. § 2201; 5 U.S.C. § 706(2)(A).

Standard of Review

The Administrative Procedure Act ("APA") provides the standard of review for Plaintiffs' claims. The APA provides that the Court "shall hold unlawful and set aside agency action, findings, and conclusions found . . . to be arbitrary and capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A).

To perform consultation under Section 7 of the ESA, federal agencies must "use the best scientific and commercial data available." 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402.14(g)(8). The

[11] Summer steelhead are not released into the Molalla or Calapooia Rivers, which are the other two rivers that comprise the winter steelhead DPS.

[12] *See* Declarations of Bill Martin Bakke, Rosemary Furfey, and Christina Eastman.

Court must determine whether the claims related to scientific data in the BiOp are "in accordance with" these laws. 5 U.S.C. § 706(2)(A). "Whether agency action is 'not in accordance with law' is a question of statutory interpretation, rather than an assessment of reasonableness in the instant case." *Se. Alaska Conservation Council v. U.S. Forest Service*, 443 F. Supp. 3d 995, 1005 (D. Alaska 2020), *rev'd on other grounds sub nom. Coeur Alaska v. Se. Alaska Conservation Council*, 557 U.S. 261, 129 S.Ct. 2458 (2009) (citing *Singh v. Clinton*, 618 F.3d 1085, 1088 (9th Cir. 2010)).

The Court reviews the claims related to the findings and conclusions in the BiOp as to whether they are "arbitrary and capricious" or "an abuse of discretion." 5 U.S.C. § 706(2)(A). Agency action is arbitrary and capricious "if the agency relied on factors Congress did not intend it to consider, entirely failed to consider an important aspect of the problem, . . . offered an explanation that runs counter to the evidence before the agency[,] or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise." *Earth Island Inst. v. U.S. Forest Serv.*, 697 F.3d 1010, 1013 (9th Cir. 2012) (cleaned up).

Argument

NMFS failed to use the best scientific data in the BiOp, and its findings and conclusions in the BiOp are arbitrary and capricious.

A. The BiOp Fails to Use the Best Scientific Data.

The BiOp must use the best scientific data available to evaluate the "environmental baseline." 50 C.F.R. § 402.14(d). These data must then be used to formulate a "detailed discussion of the effects of the action"—releasing summer steelhead—on winter steelhead, given the baseline. 50 C.F.R. § 402.14(h)(iii). Then these data must be added to evaluate "cumulative effects," meaning the "effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area . . . ." 50 C.F.R. § 402.02.

1. The BiOp Fails to Evaluate the Consequences of the Environmental Baseline.

The "environmental baseline" is the "condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action." 50 C.F.R. § 402.02.[13] To characterize the environmental baseline, a BiOp cannot just list observed, general conditions; instead, as NMFS itself has stated, it "must evaluate the 'ongoing consequences attributable to ongoing activities and the existence of [federal] agency facilities . . . [even] when the agency has no discretion to modify them." *Regulations for Interagency Cooperation*, 84 Fed. Reg. 44,976, 44,995 (Aug. 27, 2019) (emphasis added). That makes sense, because "the environmental baseline evaluations of the species or designated critical habitat will reflect the impact of those consequences and the effects of the action must be added to those effects in the Services' jeopardy and adverse modification analysis." *Id*. at 44,979.

Here, habitat conditions for winter steelhead in the North and South Santiam basins are already "poor," wholly apart from the effects of releasing summer steelhead into the same habitat. NOAA AR 2054. The existing dams have a "profound effect" on winter steelhead; they block access to 33% of historic habitat; they have "reduced the amount and complexity of juvenile rearing habitat" downstream; and they have "significantly reduced" large woody debris, which is "essential to the creation and maintenance of habitat" for winter steelhead. NOAA AR 2050. Further, water quality below the dams is poor; the rivers and certain tributaries are "water quality limited" for temperature and dissolved oxygen. NOAA AR 14382.[14] The rivers and tributaries also lack riparian shade, and adjacent lands have "poor agricultural and forestry

[13] NMFS has designated critical habitat for winter steelhead, including the North Santiam downstream of Detroit dam, the South Santiam downstream of Foster Dam, and numerous tributaries downstream of each dam. *Designation of Critical Habitat for 12 Evolutionary Significant Units of West Coast Salmon and Steelhead in Washington, Oregon, and Idaho*, 70 Fed. Reg. 52,630, 52,848 (Sept. 2, 2005).

[14] As noted, poor water quality is a primary limiting factor to recovery of winter steelhead. NOAA AR SUP 664.

practices." NOAA AR 14379–80. Indeed, as NMFS noted in 2015, "[m]uch of the accessible habitat [for winter steelhead] . . . in the North and South Santiam Rivers is degraded and under continued development pressure." NOAA AR 13928.

The BiOp fails to evaluate fully the consequences to winter steelhead of the existing degraded environmental baseline, as the Ninth Circuit requires. *Nat'l Wildlife Fed'n v. NMFS*, 524 F.3d 917, 930 (9th Cir. 2008). First, the BiOp dismisses how the degraded baseline harms incubating winter steelhead eggs by asserting that because winter steelhead spawn in tributaries, "[m]ost of the incubating eggs are not exposed to unnatural conditions." NOAA AR 2055. But that conclusion evades that winter steelhead also spawn in the mainstem rivers, and incubating eggs are harmed there by poor water quality and altered discharges from the dams. *Id*. Further, even if winter steelhead spawn only in tributaries, eggs are in fact "exposed to unnatural conditions" there, too: many major tributaries where winter steelhead spawn—such as Stout Creek in the North Santiam basin, and Thomas, Hamilton, and Crabtree Creeks in the South Santiam basin, are impaired due to high temperatures, a lack of dissolved oxygen, or both. *Id*.[15] The BiOp does not evaluate the effects of these conditions on incubating winter steelhead eggs.

As for rearing juvenile winter steelhead, the BiOp states they rear "in headwater tributaries and upper portions of the subbasins for one to four years (most often two years) . . . [and] are susceptible to the same threats and limiting factors" as juvenile spring Chinook. NOAA AR 2060. But the discussion of those threats and factors focuses on spring Chinook rearing in the reservoirs, and passage through dams; there is only one sentence that acknowledges that downstream of the dams, where winter steelhead rear, "most of the historic rearing habitat in side channels, backwater sloughs, and wetlands has been lost," and, that, as a result, "[t]he development of the riparian area, streambank armoring, and disconnection of side channels has

[15] Because the map in the record does not include the names of tributaries, Plaintiffs provide the listing for these three water quality parameters for these tributaries. Frost Decl. Exh. D.

substantially reduced the[ir] rearing capacity" in the mainstem. *Id*. But this sentence does nothing to address the "consequences attributable" to degraded conditions on rearing success.

Finally, "adult freshwater residence" for winters steelhead matters because they can be iteroparous and not die after returning to spawn. NOAA AR 2031. But the BiOp does not discuss effects of the degraded environmental baseline on *adult* steelhead at all; it discusses effects only on spring Chinook. NOAA AR 2075.[16] In sum, the BiOp fails to evaluate the consequences to winter steelhead of the degraded environmental baseline, which it must in order to evaluate effects of releasing summer steelhead into the same habitat. *National Wildlife*, 524 F.3d at 930.

2. Summer Steelhead Population Data.

The BiOp fails to provide a "detailed discussion of the effects of the action on [the] listed species," 50 C.F.R. § 402.14(h)(iii), because it fails to disclose how many adult summer steelhead return each year to the Santiam River basin and remain in the rivers, interacting with winter steelhead.

For the ten-year period from 2007 to 2016, an average of 3,014 winter steelhead returned annually to Willamette Falls. NOAA AR 2031. By contrast, as noted, the goal of the HGMP is for 14,880 summer steelhead to return to the falls annually, NOAA AR 4341, a figure almost five times greater than recent average winter steelhead returns. As to where these hatchery fish go, the BiOp cites Jepson (2015) and states "[n]early all summer steelhead returned to the rivers where they were released . . . ." NOAA AR 2126, 2137 (noting that in 2014, only one tagged summer steelhead strayed into the Molalla River). But many adult summer steelhead are not caught by anglers, nor do they return to fish traps; they remain in the rivers. NOAA AR 14448 ("collection efficiency [of returned summer steelhead adults] at the hatchery facilities is not 100 percent and not all excess hatchery fish are harvested."); USACE AR 677 (same). Indeed, the

[16] Unclipped steelhead that return into the Foster fish trap are transported above Foster Dam, but the BiOp notes any that spawn would produce juveniles that lack downstream passage through the dam. NOAA AR 2034. In fact, most unclipped steelhead that return to the vicinity of the fish trap do not enter it, and spawn immediately below the dam. NOAA AR 10957, 10976 (map).

BiOp notes "summer steelhead are successfully reproducing" by themselves in the UWR. NOAA AR 2125; USACE AR 677 ("The North Santiam River had the highest densities of summer steelhead redds observed in any of the winter steelhead populations in the ESU."). The BiOp fails to estimate how many returning summer steelhead adults do not get caught or enter traps, so it fails to assess the significant issue of how many of these fish remain in the rivers, and affect winter steelhead via displacement, competition, predation, and interbreeding.

And yet data are available to estimate the number of adult summer steelhead that may remain in the Santiam basin and affect winter steelhead. The counting station at Willamette Falls "provide[s] a complete count of fish returning to the DPS." NOAA AR 14392.[17] From 2005 through 2016, an annual average of 18,511 adult summer steelhead passed Willamette Falls each year. NOAA AR 4345. From 2006 to 2016, an annual average of 10,144 summer steelhead were caught upstream of the falls. NOAA AR 14422. That leaves an annual average of 8,367 summer steelhead adults counted at the falls but not caught above them. Since "nearly all" summer steelhead adults return to where they were released as yearlings, and 44.2% of summer steelhead yearlings are released annually into the Santiam River basin, roughly 3,698 return annually to the Santiam basin and are not caught. Indeed, the record states that after calculating fishing catch, returns to traps, and assuming a natural mortality of 10%, from 2014 to 2017, a range of 37 to 1,947 summer steelhead adults remained in the South Santiam River annually, and were "unaccounted for."[18] The 1,947 summer steelhead adults "unaccounted for" in the South Santiam River in 2014 is more than double the 833 winter steelhead adults that returned to the river. *Id*.

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[17] There are four fish counting stations: at Willamette Falls, at the Bennett Dams and Minto Fish Facility on the North Santiam, and at the Foster Fish Facility on the South Santiam. NOAA AR 2134. The one at the falls is operated every hour of every day. NOAA AR SUP 1642.

[18] These figures are viewable in the Excel document in the NOAA AR in the folder "Documents" entitled "gene flow worksheet 3-28-18," and within it, under the tab "PHOS" at the bottom of the worksheet. NMFS also published the worksheet as a PDF, and included it in the administrative record at NOAA AR 17970–18056, but it is largely unreadable.

The BiOp unlawfully fails to consider the significant number of summer steelhead not caught nor collected in traps, and how these fish impact winter steelhead.

3. Residual Summer Steelhead.

The EIS acknowledges residual summer steelhead can harm winter steelhead through predation, competition, and interbreeding. NOAA AR 14475. But the BiOp fails to use the best scientific data available to evaluate these impacts. The BiOp cites and relies on Harnish (2014) for the proposition that "residualism rates for hatchery summer steelhead is [*sic*] probably less than 10%." NOAA AR 2152. In fact, Harnish found summer steelhead residualize at an "absolute minimum" rate of 12.8%. NOAA AR SUP 1569. Harnish's finding is based on studies in 2013 and 2014 when they implanted 199 juvenile summer steelhead at the South Santiam Hatchery with radio transmitters, and did underwater observations. NOAA AR SUP 1568. Harnish found "a significant portion of the hatchery summer steelhead released as smolts did not emigrate from the South Santiam River." *Id*. Harnish found only 39.6% of radio-tagged summer steelhead left the basin. *Id*. By contrast, "the last known location of the majority of tagged fish (99 of 164 = 60.4%) was in the South Santiam River." NOAA AR SUP 1569. Indeed, 21 tagged fish were still in the river "over three months after their release." *Id*. Harnish noted "the final fate (alive or dead) remained unknown for many of the tagged fish" remaining in the river, but concluded "the proportion we detected alive (12.8%; 21 of 64) represents the absolute minimum residualization rate for the population of radio-tagged hatchery steelhead juveniles." *Id*.[19]

Applying the findings in Harnish to the 121,000 summer steelhead yearlings released into the North and South Santiam each year, the best scientific data available indicate at least 15,488 residualize annually in each river. And these figures are in addition to adult summer steelhead that return each year, and are not caught by anglers or enter traps, as well as the residualized

[19] To seek to reduce residualism, the HGMP prescribes releasing summer steelhead smolts that "volitionally exit" the hatcheries; those that do not will be stocked in lakes. NOAA AR 4350. Harnish accounted for this technique by counting only radio-tagged summer steelhead that volitionally left the hatchery; those that did not were euthanized. NOAA AR SUP 1568.

progeny of hatchery fish that spawn in the wild. NMFS failed to properly "[e]valuate the effects of the action . . . on the listed species" under 50 C.F.R. § 402.14(g)(3), because it failed to evaluate the effects on winter steelhead of the significant number of summer steelhead that residualize or return and are not caught or trapped. *Crow Indian Tribe v. United States*, 965 F.3d 662, 679 (9th Cir. 2020) (agency misintepreted existing best available science under the ESA).

4. Impacts from Fishing.

The BiOp must use the best scientific data to evaluate "cumulative effects" of releasing summer steelhead and "future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area." 50 C.F.R. § 402.02. Within the area, ODFW authorizes fishing for summer steelhead—indeed, that is the sole purpose of these hatchery fish releases. NOAA AR 4368. Fishing for summer steelhead "begins in March and extends through December." *Id*.; NOAA AR 4350 n.3. The BiOp cites a "Fisheries Management and Evaluation Plan" for winter steelhead prepared 23 years ago, and asserts fishing does not impede winter steelhead recovery "because all fisheries intercepting winter steelhead are entirely catch and release and overall impacts are less than 5% for each population." NOAA AR 2010, 2037.[20]

The best scientific data belies the BiOp's assertions about how fishing currently affects winter steelhead. First, even a true catch-and-release fishery can cause up to 8% mortality of adult winter steelhead. NOAA AR SUP 478. Given that in 2015, for example, only 1,312 and 1,195 adult winter steelhead returned to the North and South Santiam, respectively, NOAA AR 2037, 2073, causing up to 8% mortality of these already significantly diminished runs of the "core" and "genetic legacy" populations of the DPS for a solely recreational fishery contradicts that fishing does not impede recovery of the DPS; it is "counter to the evidence before the agency." *Motor Vehicle Mfrs. Ass'n. of U.S. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

[20] Steelhead are not caught "in ocean fisheries to a measurable degree." NOAA AR 2053.

Second, the BiOp elides the fact ODFW generally allows the use of bait and treble hooks to fish for summer steelhead in the Santiam basin from April 22 through October 31, when winter steelhead are present; "[t]he highest percentage (17.8%) of critical area [tongue, esophagus, gills, eye] hookings occurred when using bait and treble hooks in winter steelhead fisheries." NOAA AR SUP 478. The BiOp fails to consider or resolve how these fishing techniques singularly impact winter steelhead.

Third, the BiOp fails to analyze the best scientific data to evaluate how fishing can harm juvenile winter steelhead. Even in a fully catch-and-release fishery, juveniles experience higher mortality rates than adults, ranging up to 10%. NOAA AR SUP 479. And when as here the use of bait is allowed, the average mortality can be up to four times greater than when using artificial lures and flies. *Id*. The BiOp, however, does not distinguish among different mortalities for different age classes of winter steelhead, nor does it account for harmful fishing techniques where winter steelhead are present. In sum, the BiOp fails to evaluate the magnitude of harm from fishing to winter steelhead, and the higher range of mortality for juvenile winter steelhead.

B. The BiOp is Arbitrary and Capricious.

A BiOp is arbitrary and capricious if an agency "entirely failed to consider an important aspect of the problem," or "offered an explanation for its decision that runs counter to the evidence before the agency." *Native Fish Society,* 992 F. Supp. 2d at 1111. "In the context of the ESA, the 'problem' is whether a proposed project will cause jeopardy to a listed species[,] and 'any effect that is likely to adversely affect the species is plainly an important aspect of the problem.'" *Id*. (cleaned up).

1. Ecological Effects of Summer Steelhead on Winter Steelhead.

The BiOp must disclose all "effects of the action," to add to the environmental baseline and cumulative effects. 50 C.F.R. §§ 402.14(g)(2), (3), (4). The EIS acknowledges "[e]cological effects" of hatchery on wild fish can include predation, displacement, and competition. NOAA AR 14463. Here, all of these effects exist, and all are harmful to winter steelhead.

a. Predation.

Steelhead eat many things, but also other fish, including other steelhead. NOAA AR 2091. The BiOp notes that generally, summer steelhead can prey on winter steelhead, or attract other predators that do so. *Id*. As to the latter, one angler noted that when hatchery fish are released into the Clackamas River, "there is a temporary boom in the Merganser and Osprey populations in the lower river, greatly increasing predation" on wild fish. NOAA AR 747.

As noted, winter steelhead fry emerge from gravels generally beginning in April, NOAA AR 4354, and summer steelhead are released around April 1. NOAA AR 4400-01. When they are released, they are already "smolt-sized," as if they reared for a full year, which can give them a "size advantage" over newly-emerged winter steelhead. NOAA AR 4349. NMFS has noted "[s]almonid predators are generally thought to prey on fish approximately 1/3 or less their length. Due to their location, size, and time of emergence, newly emerged salmonid fry are likely to be the most vulnerable to predation by hatchery released fish." NOAA AR SUP 109.

The BiOp downplays predation by released summer steelhead yearlings, citing Naman (2010) for the proposition that generally, "low predation rates have been reported by released steelhead juveniles." NOAA AR 2091. Naman is a literature review of different predation studies. NOAA AR 6956. Some report low predation rates when hatchery steelhead are released after more than 70% of wild subyearlings emigrated, or had grown large enough to be less susceptible to predation. NOAA AR 6956. In contrast, Naman found "heavy predation" in the Trinity River in California when fewer than 20% of wild subyearlings had emigrated and when they were still "small enough" to be vulnerable, in a physical situation similar to the Santiam basin: a dam at the upper reach of anadromy; hatchery steelhead yearling releases at the base of the dam; wild steelhead redds within 3.2 km of the hatchery; and timing and spatial overlap between the released hatchery yearlings and emergent wild subyearlings. NOAA AR 6959. When those factors converge, as they do in the Santiam basin, Naman "documented the highest predation rate of any study that we reviewed, orders of magnitude greater than most others." *Id*.

The best available science demonstrates all factors for "heavy" predation by juvenile summer steelhead exist here, but the BiOp mischaracterizes the science.

Independently, the BiOp also fails to address adult summer steelhead predation on both newly-emerged and rearing winter steelhead. Winter steelhead fry emerge from gravels through July, NOAA AR 4354, which overlaps with some of the peak (June through August) presence of adult summer steelhead. NOAA AR SUP 1626; NOAA AR 2138 (summer steelhead "reside in the [Santiam] throughout the entire summer."). And again, at least 12.8% of summer steelhead yearlings residualize, NOAA AR SUP 1569, and "take up residency before naturally produced fry emerge from redds." NOAA AR 2089. And winter steelhead generally rear for two years in freshwater. NOAA AR 2031. So both newly-emergent and rearing juvenile winter steelhead are subject to predation by adult summer steelhead. But the BiOp fails to fully evaluate the effects of summer steelhead predation on newly-emerged or juvenile winter steelhead.

Finally, baseline conditions matter as to exacerbating harmful effects of predation. The BiOp notes predation poses a greater threat to native fish "when natural populations of salmon and steelhead are at low abundance and when spatial structure is already reduced," and "when habitat, particularly refuge habitat, is limited . . . ." NOAA AR 2091. Here, all three factors are present: (1) low abundance of winter steelhead, (2) spatial structure reduced by the dams, and (3) limited refuge habitat, because summer steelhead are released into the same areas of the river.

b. Competition.

The EIS states "competition" with released yearling summer steelhead is a "key limiting factor" for winter steelhead. NOAA AR 14475. The EIS also notes summer steelhead yearlings released earlier than when winter steelhead fry emerge "may have a competitive advantage in occupying choice feeding territories prior to the emergence of winter steelhead." *Id*. Further, it states that "when large hatchery releases result in the localized carrying capacity to be exceeded, which is presumed to be the case in [UWR] sub-basins, there is increased potential for density-dependent mortality on wild fish for early life stages." *Id*. It notes "[t]he overlap in space and

time, combined with the competitive advantage that residual hatchery steelhead appear to have over naturally produced [winter steelhead], increases the potential for negative ecological interactions that could have population-level effects on the wild winter steelhead population of the South Santiam River." NOAA AR 14476. It also notes summer steelhead yearlings and emergent winter steelhead overlap in 27% of winter steelhead critical habitat. NOAA AR 14443.

And yet the BiOp finds summer steelhead yearlings will have "low effect" as to competition with winter steelhead, in part because "most of the habitat where natural origin fish rear throughout the population areas are not exposed to releases of hatchery fish." NOAA AR 2100. This is misleading. "Most" winter steelhead adults (=70% of the DPS) return to the North and South Santiam basins, NOAA AR 10954, most seek to reach the "highest quality rearing habitat" below the dams, NOAA AR 14476, and some of the highest density of winter steelhead redds are found "directly below Foster Dam, near the South Santiam Hatchery." NOAA AR 10957 & 10976 (map). This is also precisely where summer steelhead yearlings are released, and adults return. The BiOp's finding of "low effect" due to competition is arbitrary and capricious.

c. The PCD Model Used to Simulate Harms Among Juveniles.

The BiOp cites a "Predation-Competition-Disease" ("PCD") risk model to simulate the "magnitude" of effects, "under a certain set of assumptions," of two ecological impacts--predation and competition--from summer steelhead yearlings on emergent juvenile winter steelhead. NOAA AR 2171, 2175. The PCD model was developed to evaluate effects in "tributaries or independent streams" with direct access to the ocean, but NMFS chose to use it here, to simulate effects from the "point of release of hatchery fish to the mouth of the Willamette River," meaning 34 miles downstream from the Minto Fish Facility and 48 miles downstream from the South Santiam Hatchery, respectively. NOAA AR 2171, 2174.

To run the simulation, NMFS chose certain inputs. First, NMFS chose "4" days of "interaction" between summer steelhead yearlings and emergent winter steelhead in each river.

NOAA AR 2178. Second, NMFS chose a "prey length ratio for predation" of 0.25. NOAA AR 2169. Third, NMFS chose a "piscivory rate" that does not account for steelhead preying on steelhead. *Id.* Ultimately, the model simulates losses due to predation and competition from summer steelhead yearlings of 1,130 juvenile winter steelhead in the UWR and, as a result, 34 adult winter steelhead that then will not return to the basin as a whole. NOAA AR 2178.

NMFS can choose appropriate methodologies, but here its data inputs are problematic. The BiOp states the "greatest ecological interactions" between newly-released hatchery summer steelhead and emergent winter steelhead are immediately downstream of the Minto Fish release facility and the South Santiam hatchery, NOAA AR 2179, but the PCD dilutes those data by considering effects 48 miles downstream to the mouth of the Willamette in Portland, where newly-emergent winter steelhead do not exist. Second, inputting merely "4" days of interaction between released hatchery yearlings and wild fish does not account for residualism of juvenile summer steelhead which is at minimum 12.8%. Third, the PCD model as to "Piscivory rate" does not even consider steelhead preying on steelhead; as noted, Naman noted predation is "high" when, as here, hatchery steelhead yearlings descend upon newly-emergent wild steelhead at the base of a dam.

Moreover, the PCD model does not account for competition from offspring of summer steelhead that spawned in the mainstem rivers, and in tributaries. Instead, the model simulates predation and competition only "from the release of hatchery salmon and steelhead included in the proposed action, *from their release sites* to the mouth of the Columbia River …." NOAA AR 1591 (emphasis added). Accordingly, NMFS did not adequately consider one of six categories it admits is relevant to evaluating hatchery risks: "… the progeny of naturally spawning hatchery fish in juvenile rearing areas, mainstem rivers, estuary, and ocean." NOAA AR 1503.

Finally, the BiOp does not synthesize the output from this model to explain its role in either supporting or contradicting other data and studies as to competition and predation from hatchery summer steelhead releases on newly-emergent winter steelhead. A BiOp must do more

than list data–it must indicate how they "actually factors [*sic*] into the analysis." *Oceana, Inc. v. Pritzker,* 75 F. Supp. 3d 469, 489 (D.D.C. 2014).

d. Displacement.

The BiOp notes "[n]aturally produced fish may be competitively displaced by hatchery fish early in life, especially when hatchery fish are more numerous, are of equal or greater size, when hatchery fish take up residency before naturally produced fish emerge from redds [nests], and if hatchery fish residualize." NOAA AR 2089. The BiOp cites Mapes (2017), who performed spawning surveys for winter steelhead redds in the South Santiam River. NOAA AR 2139. Mapes found winter steelhead "[r]edd density was highest in the survey section directly below Foster Dam, near the South Santiam Hatchery." NOAA AR 10957 & 10976. Further, as noted, the "highest quality rearing habitat" within the otherwise degraded baseline is immediately below the dams. NOAA AR 14476. At the same time, summer steelhead yearlings are released into the same areas, and adults return to or never left the same areas: they "migrate to the upper most extent of volitional migration," NOAA AR 2138, and they residualize "below the hatchery facilities in the North and South Santiam rivers." NOAA AR 2152.

The EIS states that "[i]n 2014, snorkeling revealed considerable overlap of habitat use (in space and time) by residual hatchery steelhead and naturally produced [winter steelhead] in the South Santiam River." NOAA AR 14476. It states summer steelhead "may be displacing naturally produced [winter steelhead] from the highest quality rearing habitat into suboptimal habitat, which could also negatively affect the wild population." *Id*. It notes "the density of naturally produced [winter steelhead] generally increased with increasing distance from the hatchery" in the South Santiam River, suggesting they were displaced by juvenile or residualized summer steelhead. *Id*.

By contrast, the BiOp does not directly address or resolve this issue. It cites a general study noting displacement may lead to "abandonment of advantageous feeding stations, or premature out-migration." NOAA AR 2090. But it never squarely addresses that *every* factor

showing significant displacement of winter steelhead is present here: (1) summer steelhead yearlings and adults are more numerous than winter steelhead in the habitat immediately below the dams; (2) summer steelhead yearlings are larger than emergent winter steelhead fry, giving them "a size advantage," NOAA AR 4341, 4349, 4371; and (3) summer steelhead residualize in the same habitat winter steelhead seek. NOAA AR 14476, 2152. These factors converge to show that significant displacement occurs, but the BiOp fails to address or evaluate this significant problem.

2. Genetic Introgression.

The BiOp acknowledges a primary threat from summer to winter steelhead is genetic introgression from two kinds of interactions: "hatchery-origin fish spawning with natural-origin fish[,] and hatchery-origin fish spawning with each other." NOAA AR 2153.[21] Both interactions matter because the best available scientific data demonstrate genetic introgression from hatchery to wild salmonids negatively affects the fitness, productivity, and genetic diversity of wild salmonids. NOAA AR 6728, 8004, 12428; USACE AR 3418. For example, hatchery steelhead are generally less fit than wild steelhead; traits from hatchery steelhead are passed to subsequent generations; and progeny of one hatchery and one wild parent are less fit than progeny of two wild parents. NOAA AR 12428; USACE AR 3418. In addition, hatchery steelhead from non-local stocks, including Skamania summer steelhead, are significantly less fit than wild steelhead. NOAA AR 12428. Genetic introgression also harms genetic diversity and local adaptations of wild salmonids necessary for their long-term productivity. NOAA AR 6734. These risks are so significant that, in another case, ODFW's former Fish Division Director declared that genetic risks increase when the proportion of hatchery origin spawners ("pHOS") exceeds 5% and pHOS "as low as one to two percent for a large, segregated harvest program may pose unacceptable risks to natural populations." *Native Fish Society*, 992 F. Supp. 2d at 1105–06 (citing Am. Decl.

[21] "Gene flow" means "contributing to the same progeny population." NOAA AR 2083.

of Edward Bowles at ¶ 127, *Nat'l Wildlife Fed'n v. NMFS*, 839 F. Supp. 2d 1117 (D. Or. 2011)); *see* NMFS AR 2144 (explaining pHOS).

The BiOp fails to resolve that a significant portion of the winter steelhead DPS is already genetically compromised, and further introgression caused by ongoing summer steelhead releases could make this introgression only worse. Johnson et al. (2013) analyzed genetic data from UWR basin steelhead and found 11.1% of juvenile steelhead emigrating from the North Santiam River, and 14.8% from the South Santiam River, were genetic "hybrids," suggesting they were offspring of native winter and introduced summer steelhead adults or descendants of such offspring. NOAA AR 12973. Similarly, Johnson et al. (2018) found only 51.3% of unclipped steelhead captured at Willamette Falls were of pure, native winter steelhead ancestry; the rest were summer steelhead, feral hatchery winter steelhead, or summer-winter steelhead hybrids. NOAA AR 6586. They also found 8% and 14% of steelhead sampled below dams on the North Santiam and South Santiam Rivers, respectively, were summer-winter steelhead hybrids. NOAA AR 6581. Finally, Weigel et al. (2018) found more than one-quarter of winter steelhead possessed non-native genes. NOAA AR 67. These findings show a significant portion of the DPS is genetically compromised, yet the BiOp fails to take these findings into account to candidly explain the genetic baseline when analyzing the impacts of even more genetic influence from summer steelhead.

3. The BiOp Fails to Evaluate the Consequences of Climate Change in the DPS.

The BiOp acknowledges climate change is "projected to have serious implications" for salmon and steelhead in the Columbia River basin. NOAA AR 2047. The BiOp then cites Doppelt (2009) that conditions "in the UWR" "are going to change substantially" in the coming century due to climate change, including higher ambient air temperatures, less precipitation, less snow, earlier snowmelt, and possible storm increases. NOAA AR 2047–48. But Doppelt is not only outdated (based on data more than a decade older than the BiOp), it predicts how a

worsening climate will affect a different "UWR" than where the winter steelhead DPS exists: it analyzes effects in the McKenzie and other rivers flowing near Eugene. NOAA AR 12756.

The difference matters because it illuminates the BiOp's cursory treatment of this critical subject. The McKenzie is one of the coldest, cleanest rivers in the West; the North and South Santiam Rivers and many major tributaries are "water quality limited" for high temperatures, low dissolved oxygen, or both, which already significantly stress winter steelhead. NOAA AR 14382. And the BiOp anticipates even greater increases in stream temperatures in the region of 2º F to 4º F generally, including 4º F to 6º F in the summer. NOAA AR 2048. But the BiOp fails to start with the degraded baseline and then make the required quantitative analysis of how even worsened conditions will affect winter steelhead. *Nat'l Wildlife Fed'n v. NMFS,* 184 F. Supp. 3d 861, 920 (D. Or. 2016) (BiOp failed to properly address climate change because it did not perform a "quantitative analysis for freshwater climate conditions.").

Moreover, the BiOp cannot rest on generally reciting projected dire climate conditions; it must analyze the effects on winter steelhead of the *proposed action* (here, releasing summer steelhead into the same habitat), given those conditions. *Wild Fish Conservancy v. Irving*, 221 F. Supp. 3d 1224, 1234 (E.D. Wash. 2016) (BiOp's finding that "climate change is likely to warm and change the hydrology of the entire critical habitat for [Upper Columbia Steelhead]" is "conclusory and unconnected to the analysis of the Hatchery's operations and water use."). The BiOp simply says winter steelhead "have higher temperature tolerances that will enable juvenile fish to utilize habitats that will be increasingly affected by climate change," and that while "[w]inter steelhead in the UWR...will be impacted by climate change[,] ... due to their life history and distribution, effects are not likely to be as extreme as for spring Chinook." NOAA AR 1290. The first premise is partly wrong, because tributaries in the Santiam basin are water quality impaired too, and the second premise is irrelevant, because the issue is not how climate change will comparatively impact winter steelhead and spring Chinook; the issue is how climate change will affect winter steelhead.

In addition to failing to quantify effects on winter steelhead from a degraded baseline made worse by climate change, the BiOp fails to put into the calculus the significantly-depressed winter steelhead population numbers, and assess whether winter steelhead can sustain impacts from summer steelhead "on top of potential climate change effects." *W. Watersheds Project v. McKay*, No. 22-35706, 2022 WL 7042541, at *2 (9th Cir. Oct. 26, 2023) (BiOp failed to consider "whether the small frog population could sustain grazing related impacts on top of potential climate change effects").

In sum, the BiOp fails to evaluate how the projections of "serious implications" from climate change will affect already depressed winter steelhead populations in degraded habitat. And these errors matter because, as noted, the BiOp has no expiry date. It will be re-evaluated only if reinitation of consultation is triggered. *Allen*, 476 F.3d at 1041. But there are no DPS-specific projections about climate change upon which "new information" can be weighed.

C. The No Jeopardy Finding is Unlawful.

To determine whether an action is not likely to jeopardize the continued existence of a listed species, a BiOp may rely on measures if they constitute a "clear, definite commitment of resources," and are "under agency control or otherwise reasonably certain to occur." *Ctr. for Biological Diversity v. Bernhardt*, 982 F.3d 723, 743 (9th Cir. 2020) (quoting *National Wildlife*, 524 F.3d at 936 & n.17). Further, "[t]he measures 'must be subject to deadlines or otherwise-enforceable obligations; and most important, they must address the threats to the species in a way that satisfies the jeopardy and adverse modification standards." *Id*.

The BiOp states four management actions from the summer steelhead HGMP as the primary bases for finding summer steelhead do not jeopardize winter steelhead: (1) a less than 2% gene flow standard, (2) advancing spawn timing of adult summer steelhead, (3) terminating "recycling" of adult summer steelhead that return to traps, and (4) reducing by 25% the number of summer steelhead yearlings released into the South Santiam River. NOAA AR 2009–10. NMFS's reliance on these four measures is arbitrary and capricious, for the following reasons.

1. Capping Gene Flow at Less than 2%.

The no jeopardy opinion relies on "managing gene flow (introgression)" from summer steelhead into winter steelhead "to less than 2%." NOAA AR 2010. NMFS's reliance on this standard is arbitrary and capricious for two reasons: first, the ≤ 21% pHOS limit will result in exceedence of the less than 2% gene flow standard, and second, NMFS and ODFW found current gene flow cannot be confidently measured as to the recent progeny of summer steelhead that mated with winter steelhead.

The BiOp uses the "Scott-Gill" method to calculate whether the 2% gene flow standard was already being met; however, it used flawed assumptions in this calculation. NOAA AR 2010, 2153–54. That method uses pHOS, the proportions of natural-origin fish ("O_N") and hatchery-origin fish ("O_H") present during the period when they might interbreed (the "overlap period"), and other factors. *Id*. First, the BiOp assumes an historic "range of pHOS values from 10% to 30% … to calculate gene flow …" *Id*. NOAA AR 2154. But the record includes a worksheet stating the "best estimated pHOS" levels in the DPS, NMFS AR 17983–85, 17988, showing pHOS levels in the North Santiam were 62%, 26%, and 48% during 2012, 2013, and 2014, respectively. NOAA AR 17986. In the South Santiam, pHOS levels were 70%, 24%, and 59% during years 2014, 2015, and 2016, respectively. NOAA AR 17988. Had the BiOp based its assumptions on correct data, gene flow rates have historically been greater than 2% by factors of roughly two to four times the gene flow limit. NOAA AR 2157.[22]

Second, the BiOp assumes a spawning overlap period of November through January, even though summer steelhead spawn in February and March, when even more winter steelhead

[22] Figure 60 shows what gene flow rates are based on various pHOS levels and assuming the same O_N and O_H values (*i.e.*, O_N = 1.23% and O_H = 39%). NMFS AR 2157. Based on the pHOS values in the worksheet, gene flow in both the North Santiam and South Santiam populations would have ranged from approximately 4.5% to over 8.5%, well above the 2% gene flow limit. NOAA AR 2157. Figure 60 does not show what gene flow levels would be assuming pHOS is over 40%, but considering the trend line, it is reasonable to assume that gene flow would likely exceed 10% when pHOS levels exceed 50%. *Id*.

are present. NMFS AR 2147, 6906, 7920, 8157; USACE AR 205, 677–78. Choosing an overly-constricted overlap period, NMFS assumed O_N was 1.23% and O_H was 39%. NOAA AR 2149. Based on these metrics, gene flow for these populations actually range from 1.8% to 5.7%. *Id.*

Most important, the HGMP allows a summer steelhead pHOS level that cannot meet the less than 2% gene flow standard. The BiOp states 10% pHOS results in gene flow of 1.8%, NOAA AR 2154, and 20% pHOS results in gene flow of roughly 3.75%. NOAA AR 2157. But the HGMP allows "≤ 21% pHOS" below dams in the Santiam basin. NOAA AR 4341-42. The no jeopardy finding unlawfully relies on a permissible level of pHOS that will greatly exceed the less than 2% gene flow standard and, for this reason, the finding is arbitrary and capricious.

2. Advancing Summer Steelhead Spawn Timing.

The no jeopardy finding also relies on the measure of "[a]dvancing the spawn timing of hatchery summer steelhead by spawning broodstock earlier (primarily in December compared to later timing in previous years). The purpose is to segregate spawning of summer and winter steelhead to minimize overlap in time and space." NOAA AR 2009. This reliance is flawed.

First, it is misleading to characterize "advancing" spawn timing as new, because for years roughly one-third of summer steelhead have been spawned in December. NMFS AR 2143. This measure is really about spawning an undefined, higher percentage of summer steelhead in December. And yet doing that depends on whether even more adults are "ripe" to spawn at that time, which the BiOp does not explain can in fact happen. *Cf*. NOAA AR 5315 (the "fish facility provides flexibility [for] . . . early spawning *if* ripe fish are available.") (emphasis added).

Second, the BiOp does not explain how advanced spawning would be effective when summer steelhead continue to spawn in the wild in February through March, a period when summer steelhead have not been spawned at the hatchery. NOAA AR 2147, 6906, 7920, 8157; USACE AR 677–78; NOAA AR 5315 (explaining that summer steelhead were historically spawned at the hatchery from late December through mid-February).

Third, the BiOp ignores the fact untrapped summer steelhead will not be reprogrammed to spawn earlier. Also, if recycling is indeed terminated, more untrapped summer steelhead may wait to spawn with winter steelhead, as fewer summer steelhead mates will be available. The BiOp does not consider or analyze these tradeoffs.

Fourth, there is no guarantee hatchery spawning will stop by January 1st, as NMFS implies. NOAA AR 2147. The HGMP explains ODFW "attempts to complete spawning by December," but neither the HGMP or ITS prohibit ODFW from spawning fish in January or later. Indeed, the HGMP includes only a "target competition date [of] Dec 31st[,]" making spawning fish by the end of the year aspirational, not mandatory. NOAA AR 4342.

Last, the BiOp does not explain the ecological effects of programming more summer steelhead to spawn earlier. If that works, and more summer steelhead hatch earlier as a result of earlier spawning, then summer steelhead released from the hatchery and the offspring of reprogrammed summer steelhead that spawn in the wild will hatch earlier, and have more time to grow, affording them even more competitive advantage over smaller winter steelhead.

3. "Terminating" Recycling.

The no jeopardy opinion relies on "terminating recycling" of summer steelhead. Recycling means to take adults that return to traps but are not needed for broodstock and release them back into the river to enhance fishing. NOAA AR 2010. Historically, ODFW recycled significant numbers of summer steelhead: from 2012 to 2014, between 2,651 and 3,901 were recycled back into the South Santiam River annually, which in 2012, exceeded by a factor of *six* how many winter steelhead returned. NOAA AR 8020–21. Further, most recycled summer steelhead are not caught, nor return to traps. Erdman (2018) found that of 283 tagged summer steelhead recycled into the South Santiam River, 11.3% were caught, 34.3% returned to the trap, 9.2% strayed outside of the river, and fully 54.4% remained in the river. NOAA AR 8014, 8019.

Here, there is no guarantee recycling is "terminated." The HGMP includes as a "program performance standard" that "[e]xcess adult hatchery returns are recycled through the fishery to

increase harvest rate." NOAA AR 4338. It states ODFW will "suspend the recycling programs in the Santiam Basin until there is evidence that the programs present little risk to winter steelhead." NOAA AR 4346. The BiOp itself states ODFW will "suspend" recycling. NOAA AR 2145. To "suspend" means to temporarily cease something. MERRIAM WEBSTER DICTIONARY (2020). In its NEPA ROD, NMFS states it "will specify what recycling (if any) can occur for hatchery summer steelhead." NOAA AR 14087. When Plaintiffs commented on the DEIS that NMFS failed to clarify these ambiguities, NMFS responded "there are management guidelines in the HGMPs that prohibit recycling after September 1st each year. There are no limits to recycling before this date, although ODFW may choose to not recycle." NOAA AR 14731. All of this shows there is no guarantee recycling is terminated. NMFS could have providing that recycling is terminated by including it a term and condition of the ITS. Instead, NMFS did otherwise, *requiring* the Corps to "[f]und and implement" the summer steelhead HGMP as approved. NOAA AR 2204. The Court cannot rely on any termination of recycling "without more solid guarantees that [it] will actually occur." *Nat'l Wildlife Fed'n*, 524 F.3d at 935.

4. Interim, Temporarily Reduced Releases into the South Santiam.

The no jeopardy opinion relies on reducing the number of summer steelhead yearlings released into the South Santiam River by 25%, NOAA AR 2193–94, but again, the HGMP states this is "an *interim* step to address potential, ongoing interactions between . . . winter steelhead and hatchery summer steelhead, releases are being *temporarily reduced* in the South Santiam by 25% - to 121,000." NOAA AR 4343 (emphases added). This measure is both "temporary" and for an undefined "interim" period. It is not lawful for NMFS to assume a reduction is guaranteed.

D. The ITS is Arbitrary and Capricious.

If a consulting agency finds a proposed action will not cause jeopardy to a listed species, it must also evaluate whether the action may take individual members of the species. 16 U.S.C. § 1536(b)(4). If so, the agency must issue an ITS specifying (1) the impact, *i.e.*, the amount or extent of such incidental take on the species; (2) reasonable and prudent measures necessary or

appropriate to minimize the impact; and (3) mandatory terms and conditions to implement the measures. 50 C.F.R. §§ 402.14(i)(1)(i), (ii), (iv). The ITS must also ensure the amount or extent of incidental take can be monitored and is reported to the consulting agency. 50 C.F.R. § 402.14(i)(3). A purpose of an ITS is to set a clear level of take, or "trigger," which, if exceeded, requires reinitiation of consultation. *Allen*, 476 F.3d at 1038. If the amount or extent of incidental take is exceeded, that indicates the analyses and findings in a BiOp need to be revisited. *Ctr. for Biological Diversity v. Salazar*, 695 F.3d 893, 912 (9th Cir. 2012).

The Ninth Circuit has noted "Congress has clearly declared a preference for expressing take [in an ITS] in numerical form" of individual members of the species. *Allen*, 476 F.3d at 1037. However, if it is "not practical" to express take that way, a consulting agency may use a surrogate—"*e.g.*, similarly affected species or habitat or ecological conditions"—if it (1) "[d]escribes the causal link between the surrogate and take of the listed species," (2) "explains why it is not practical to express the amount or extent of anticipated take or to monitor take-related impacts in terms of individuals of the listed species," and (3) "sets a clear standard for determining when the level of anticipated take has been exceeded." 50 C.F.R. § 402.14(i)(1)(i).

Here, NMFS found the summer steelhead program will not cause jeopardy to the winter steelhead DPS, but also that summer steelhead will take individual winter steelhead, primarily due to summer steelhead and the progeny of naturally-spawning summer steelhead (1) on winter steelhead spawning grounds, and (2) in juvenile winter steelhead rearing areas. NOAA AR 2198. NMFS found the results of these interactions include "genetic effects . . . through interbreeding between the hatchery and natural-origin fish," and "ecological interactions of hatchery [] steelhead in rearing areas." NOAA AR 2200–01. Accordingly, NMFS issued an ITS to address incidental take of winter steelhead due to genetic and ecological effects from summer steelhead. NOAA AR 2197–2209.

The ITS is arbitrary and capricious for three reasons: (1) it sets as take "limits" allowed increases in the number and size of summer steelhead yearlings that were never evaluated as to

jeopardy, (2) it fails to set limits on all aspects of ecological take, and (3) it requires detection and monitoring of "current" gene flow, which cannot be accurately measured.

1. The ITS Allows Summer Steelhead Increases the BiOp Did Not Evaluate.

The ITS addresses take of winter steelhead in juvenile rearing areas via a surrogate that "that relies on the ability of the program to meet several parameters, which tend to stabilize the extent of take." NOAA AR 2201. The ITS states the permissible amount or extent of incidental take by three indicia: the "smolt release goal" of the summer steelhead HGMP, the size of the yearlings released, and where they are released. *Id*. But notably, as to the both the number of yearlings, and their size, the ITS allows 10% "annual variability," which can mean *increases* in both. *Id*.

The permissible increases in the ITS of both the number and size of summer steelhead yearlings beyond what was evaluated in the BiOp are unlawful. As noted, the purpose of an ITS is to set a trigger of permissible incidental take that if exceeded requires reinitiation of consultation. Here, the ITS sets a level of permissible incidental take due to ecological effects that exceeds what was evaluated in the BiOp as to jeopardy: 10% more than 121,000 yearlings (meaning 133,100 yearlings) into both the North and South Santiam Rivers, NOAA AR 4344, and yearlings larger than the target size of "4.5 fpp." NOAA AR 4341. The ITS unlawfully insulates two exceedances of the proposed action from reinitation of consultation as to whether they may cause jeopardy to winter steelhead, even though the BiOp did not evaluate either.

2. The ITS Does Not Set a pHOS Limit for Ecological Take.

The ITS states incidental take will occur in part through ecological interactions of summer steelhead in juvenile rearing areas, yet fails to set take limits that cover all of those interactions. NOAA AR 2201. The ITS sets ecological take limits as to the number of summer steelhead yearlings from the hatchery, but it does not set any ecological take limits related to summer steelhead that are born in the wild. NOAA AR 2201-2202. Specifically, it did not set pHOS-based ecological take limits, which address the latter effects.

The omission of a pHOS-based ecological take limit conflicts with the best available scientific data on ecological take and the practice of using pHOS to measure and limit such take. As ODFW's former Fish Division Director declared, "ecological risks have been demonstrated to occur when [pHOS] is over 10%." *See Native Fish Society*, 992 F. Supp. 2d at 1105 (citing Am. Decl. of Edward Bowles at ¶ 127, *Nat'l Wildlife Fed'n v. NMFS*, 839 F. Supp. 2d 1117 (D. Or. 2011)). Also, the Hatchery Scientific Review Group, established by Congress, advises that to control genetic and ecological take, pHOS from segregated hatchery programs such as summer steelhead program should be "kept low (pHOS <5% to <10%)." NOAA AR 8672. Thus, even if NMFS asserts the ≤ 21% pHOS limit also relates to ecological take, the ITS would still be unlawful because it is not based on the best available scientific data, and the BiOp does not explain why such a higher pHOS level avoids jeopardy to the species – nor could it.

NMFS's failure to include a pHOS-based ecological take limit conflicts with its decision to include such a limit in another BiOp that deals with releases of summer steelhead in southwest Washington. USFWS AR 2277–4114. Roughly two years before NMFS issued the BiOp, NMFS issued a BiOp for Mitchell Act-funded hatcheries in the Columbia River Basin. *Id.* That BiOp sets pHOS limits for genetic and ecological take. USFWS AR 4014–15. As that BiOp explains, "[i]n situations where gene flow is calculated, the limit of pHOS is relegated to limits established for ecological effects . . . ." FWS AR 4014. That makes sense because gene flow does not measure ecological take. Despite NMFS's understanding of this concept, it did not include a pHOS-based ecological take limit in this ITS. NMFS's failure to include such a limit in the ITS at issue, or explain why it was not needed, is arbitrary and capricious.

3. The ITS's Genetic Monitoring Requirement Cannot be Measured

To measure genetic take, the ITS requires ODFW to determine the numeric "current" gene flow using genetic samples. NOAA AR 2207. If they could be obtained, data detecting the presence of the first hereditary filial generation ("F1") offspring that had one summer steelhead parent and one winter steelhead parent could "provide strong evidence of *recent* inbreeding

between hatchery and native steelhead." NOAA AR 6575 (emphasis added). However, in 2018, one year before the BiOp was issued, NMFS and ODFW acknowledged "the extent to which hybridization between introduced hatchery and native steelhead *currently occurs* in the UWR remains unknown." NOAA AR 6589 (emphasis added). That is because geneticists could not confidently determine, based on genetic testing, "whether introgressive hybridization is happening currently (actively producing F1s) or a lingering, legacy signal . . . ." USACE AR 5697 (stating: ". . . . the available software . . . . cannot address the questions related to the time frame upon which hybridization occurs."). As a result, "current" gene flow cannot be accurately monitored or reported, so the ITS is arbitrary and capricious to adopt it as a measure of incidental take.

E. Summer Steelhead Jeopardize Winter Steelhead.

The administrative records prove summer steelhead jeopardize winter steelhead.

Big Cliff and Detroit Dams on the North Santiam and Foster Dam on the South Santiam block winter steelhead from roughly one-third of historic habitat, NOAA AR 2809, and "the best spawning and rearing habitat is located upstream of the dams." FWS AR 2494; *South Yuba River Citizens League v. NMFS*, 723 F. Supp. 2d 1247, 1260 (E.D. Cal. 2010) (dam blocking migration to important historic habitat factors into jeopardy determination). So winter steelhead seek to spawn and rear generally in remaining accessible habitat immediately below the dams and in adjacent tributaries. NOAA AR 14476; NOAA AR 2065. Fish habitat conditions in these areas are "poor," including high stream temperatures, low dissolved oxygen, poor farming and forestry practices, and a lack of riparian vegetation. NOAA AR 2054, 14382, 14379–80. Accordingly, in the winter steelhead DPS, there is an existing "degraded baseline." *National Wildlife,* 524 F.3d at 930 (requiring consideration of degraded baseline in jeopardy analysis). And with climate change, existing degraded conditions are projected to "change substantially" for the worse: even higher stream temperatures, less snow and earlier snowmelt, and lower flows. NOAA AR 2047–48.

Summer steelhead are released into the same degraded habitat in the mainstem rivers below the dams. NOAA AR 2008. They are released as yearlings, meaning about one-year old, and have a size advantage over any emergent winter steelhead. NOAA AR 4341, 4349. Because summer steelhead are released below a dam at the upper limit of anadromy, and there is overlap in time and space between hatchery yearlings and emergent wild subyearlings, "heavy" predation can exist. NOAA AR 6959. But even if there were no timing or space overlap between summer steelhead yearlings and emergent winter steelhead, "the absolute minimum residualization rate for the population of radio-tagged hatchery [summer] steelhead juveniles" in the Santiam River basin is 12.8%. NOAA AR SUP 1569. 12.8% of 121,000 yearlings released into the North and South Santiam Rivers is 15,616 residual yearlings in each.

Under the summer steelhead HGMP, 547,500 hatchery summer steelhead yearlings will be released annually into the UWR, NOAA AR 4344, to seek to have 14,880 adults return to the UWR for fishing and broodstock. NOAA AR 4341, 4344. 44.2% of all summer steelhead yearlings are released into the "core" and "genetic legacy" DPS population areas of the North and South Santiam Rivers, NOAA AR 4344, so up to 6,576 summer steelhead adults may return to these areas. When they do, not all are caught or collected in traps: in 2017, 1,947 summer steelhead adults remained "unaccounted for" in the South Santiam River. NOAA AR 17983.

Genetic introgression from hatchery to wild fish results in lower fitness, survival, and productivity, NOAA AR 6728, 8004, 12428, and there is already a baseline of significant genetic introgression from summer into winter steelhead. In 2018, a published study based on genetic sampling of unclipped steelhead at Willamette Falls revealed only roughly one-half were of pure, native winter steelhead ancestry; the rest were summer steelhead, feral hatchery winter steelhead, or summer-winter steelhead hybrids. NOAA AR 6586.

Finally, annual returns of winter steelhead to the DPS when the BiOp was issued were a fraction of recent average annual historic returns: 822 adults in 2017, USACE AR 5406, compared to an annual average from 1985 to 1990 of 4,707 fish, peaking one year at 13,452 fish.

NOAA AR 2031. The 2015 winter steelhead status review states that none of the four listed populations in the DPS is meeting recovery goals, and the trend for each is "downward." NOAA AR 2036-37.

The jeopardy determination is required to be additive. 50 C.F.R. § 402.14(g)(4). The BiOp fails to properly add up the lack of access to one-third of important historic spawning and rearing habitat; a degraded environmental baseline; a projected worsening of the degraded environmental baseline; depressed winter steelhead populations; and introduction of a non-native species of fish that the administrative records reveal, in *every* considered metric, risk or cause harm to winter steelhead via competition, displacement, predation, and genetic introgression.

The Ninth Circuit has stated that "[t]o 'jeopardize' – the action ESA prohibits – means to 'expose to loss or injury' or to 'imperil.'" *National Wildlife,* 524 F.3d at 930. The Ninth Circuit has also ruled that "an agency may not take action that will tip a species from a state of precarious survival into a state of likely extinction. Likewise, even where baseline conditions already jeopardize a species, an agency may not take action that deepens the jeopardy by causing additional harm." *Id*. That is precisely what is happening with releases of non-native summer steelhead into the winter steelhead DPS.

F. The EIS Violates NEPA.

The EIS fails to include a reasonable range of alternatives. An EIS must consider the "purpose and need" for a proposed action, and "[r]igorously explore and objectively evaluate" effects of "all reasonable alternatives" to the action. 40 C.F.R. §§ 1502.13, 1502.14. The alternatives analysis is "the heart" of the NEPA process because it "present[s] the environmental impacts of the proposal and the alternatives in comparative form," allowing for informed decision-making and public participation. *Id*. at §§ 1500.1(b) & (c), 1502.14. This Court reviews whether NMFS considered a sufficient range of alternatives under a "rule of reason" standard that requires the agency to analyze "alternatives necessary to permit a reasoned choice." *Presidio Golf Club v. Nat'l Park Service*, 155 F.3d 1153, 1160 (9th Cir. 1998) (cleaned up). "A viable but

unexamined alternative renders [an EIS] inadequate." *Muckleshoot Indian Tribe v. U.S. Forest Serv.*, 177 F.3d 800, 814 (9th Cir. 1999) (cleaned up).

Here, the EIS states the "purpose" is to ensure "ESA compliance," and the need is "to ensure the hatchery programs are being managed" to conserve and recover ESA-listed winter steelhead and spring Chinook. NOAA AR 14355. The EIS is unlawful because it fails to consider a reasonable range of alternatives to meet the purpose and need. The EIS includes a "no action" alternative that broadly proposes to "Terminate the Existing Hatchery Programs in the Upper Willamette River Basin." NOAA AR 14371. That means not approving both the four spring Chinook hatchery HGMPs, and the summer steelhead HGMP. *Id*. That is a false dichotomy. As noted, hatchery spring Chinook in the UWR are listed under the ESA, NOAA AR 14380, and have a conservation role to support recovery of wild spring Chinook, NOAA AR 14444, while summer steelhead are not listed, 64 Fed. Reg at 14,517, and "have no conservation or recovery benefits" for winter steelhead. NOAA AR 14370. Moreover, as Plaintiffs establish, summer steelhead risk or cause harm to winter steelhead in every metric analyzed. NMFS's failure to include a reasonable alternative of approving the hatchery spring Chinook programs, but not the summer steelhead program, fails to meet the purpose and need of complying with the ESA and conserving and recovering spring Chinook and winter steelhead. NOAA AR 14322.[23]

G. The Court Should Vacate the Unlawful Agency Actions.

The APA provides the standard of judicial review of Plaintiffs' claims under the ESA and under NEPA. *National Wildlife*, 524 F.3d at 927 (ESA); *Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt.*, 387 F.3d 989, 992 (9th Cir. 2004) (NEPA). "Under the APA, the normal remedy for an unlawful agency action is to 'set aside' the action. In other words, a court should vacate the agency's action and remand to the agency to act in compliance with its statutory

[23] Plaintiffs squarely raised this issue in their comments on the draft EIS, NOAA AR 14712, and NMFS evaded it, responding that it was lawful to analyze only what would happen if "all hatchery operations would cease," NOAA AR 14731, without distinguishing among the distinct hatchery programs.

obligations." *Se. Alaska Conservation Council v. U.S. Army Corps of Eng'rs,* 486 F.3d 638, 654 (9th Cir. 2007) (internal quotation marks and citation omitted), *rev'd on other grounds sub nom. Coeur Alaska v. Se. Alaska Conservation Council*, 557 U.S. 261, 129 S.Ct. 2458 (2009). Here, because Plaintiffs prove they are unlawful, the Court should set aside the BiOP, EIS and ROD, and approval of the summer steelhead HGMP.

Conclusion.

The Court should grant Plaintiffs' request for declaratory relief and vacatur.

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Respectfully submitted,

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